REMARKS

Reconsideration of the application is respectfully requested.

The new rejections of claims 28, 29, 32-34, 36, 41, and 43 under 35 USC §102(b) and of claims 30, 35, and 42 under 35 USC §103(a), both based on U.S. Patent No. 4,922,483 (Kobayashi), are respectfully traversed on the grounds that the Kobayashi patent fails to disclose or fairly suggest:

- modulating a multi-channel sampled signal to generate an output voice signal by adjusting the magnitude of the multi-channel sampled signal, converting the multi-channel sampled signal to an analog output voice signal, and amplifying the magnitude of the output voice signal, as recited in independent claim 28,
- the channel selector coupled to voice data generators, and a voice generator coupled to the channel selector for modulating the multi-channel signal to provide a voice output, as recited in claim 33 and set forth in the "Allowable Subject Matter" description in item 7 on page 3 of the Official Action dated November 4, 2003, or
- the time-division multiplexing unit and voice generator for modulating a multi-channel sampled signal as recited in new claim 44, the output voice signal generated by the voice generator containing voice information of the plurality of voice signals generated by a plurality of voice data generators.

Instead, the Kobayashi patent is directed to modulation of a PCM music signals for FM (frequency modulated) transmission over a cable television system, and not to synthesis of a voice signal by digital sampling over multiple channels, time division multiplexing, and adjustment of the *magnitude* of the resulting signal prior to conversion to analog, as claimed. Kobayashi does use the terms "time-division multiplexing"and "modulation," but not in a way that even remotely corresponds to the claimed invention, and the channel selection used as the receiver end of the transmission system disclosed by Kobayashi is generated from a signal containing information of only <u>one</u> channel selected in the receiver, not a multi-channel sampled signal generated in a time division sampling step, as claimed.

The claimed invention is a voice signal generating method and apparatus that spreads the voice signal over multiple channels so as to facilitate adjustment of the final voice signal. According to the disclosure of the invention, individual voice signals are sampled under the control of multiple input control signals, followed by time division multiplexing to obtain a combined output voice signal. The individual sampling control enables the ratio of specific voice signals to a synthesized voice to be easily adjusted by changing the numbers of channels occupied by the specific voice signal, and yet avoids the need for the adder used in the admitted prior art, thereby avoiding the negative effect of the adder on voice resolution. This is accomplished, in effect, by having each of a plurality of voice data generators generate a voice signal of an associated channel, and utilizing the channel selector to successively sample the voice signals of the different channels to generate an "alternative voice signal," which can then be sent directly to the voice generator without being demodulated beforehand.

While it is true that the Kobayashi patent discloses a multi-channel system that involves "time division multiplexed signals," there is no disclosure of modulating the multi-channel signal by adjusting the magnitude of the signal and converting the signal to an analog output signal, as claimed, much less doing so with multiple digital voice signals. **To the contrary, the signals multiplexed by the system of Kobayashi are disclosed as pulse code modulated (PCM) music signals, and the modulation does *not* result in conversion of a multi-channel time divisionally sampled signal to an analog voice signal for output over a speaker as claimed, whether voice or music, but rather a frequency modulated PCM signal suitable for cable TV transmission**. The system of Kobayashi has nothing to do with voice signal generation, much less voice signal generation by digital sampling of multiple voice signals over multiple channels, as claimed, followed by time division multiplexing, adjustment of the magnitude of the time division multiplexed signal, and conversion to analog. The "modulation" disclosed by Kobayashi involves modulation by a carrier for transmission, not adjustment of a voice signal output.

According to the item 3 on page 2 of the Official Action, The Kobayashi's use of blocks corresponds to the claimed multiple channel sampling of digital voice signals. However, whereas the blocks of Kobayashi may have one or more channels, each of the claimed voice signals "corresponds to one of the channels." Unlike the "blocks" of Kobayashi, the claimed voice signals are time division multiplexed by a "channel selecting signal" that combines the individual voice signals on individual channels into a multiple channel signal for adjustment and conversion into an analog voice signal. In Kobayashi, the "blocks," which are not the same as the claimed voice signals corresponding to one channel each, are combined by time division multiplexing in groups of four and then frequency converted, mixed, and frequency multiplexed for transmission by cable (col. 2, lines 49-65) and, ultimately, selection of a single channel for replay at the receiving end. **As explained in col. 2, lines 63-66 of Kobayashi, "*The time division multiplexing unit 1, 2, and 3 each correspond to one TV channel. Thus, the mixer 4 frequency multiplexes three TV channels.*"** This enables music channels to more efficiently carried by the cable (by combining them to occupy the bandwidth of a television signal). It has nothing to do with voice signal synthesis out of multiple individual voice signals as claimed, and the individual steps of the transmission method of Kobayashi do not correspond to those of the claimed invention.

If anything, individual channel sampling of the type claimed would defeat the purpose of the transmission system of Kobayashi. Normally, in a transmission system, one seeks to transmit the original with as little distortion as possible, and not to combine individual channel signals to generate a composite output signal such as the claimed voice signal. The modulation and multiplexing of Kobayashi has as its ultimate goal to enable efficient transmission and accurate reproduction, not "adjustment," of an output signal made up of concatenated individual channel signals. Therefore, inclusion of channel sampling in the system of Kobayashi based on the claimed channel selecting (as opposed to frequency or FM carrier) signal, and modulation of the magnitude of the combined signal before frequency modulation (which the Examiner apparently equates to digital-to-analog conversion), makes no sense.

The method and system of Kobayashi thus differs from the claimed invention in that:

a. it uses a different source (**pulse modulated music blocks *versus* digital voice signals** corresponding to **one channel each**);

b. a different type of time division multiplexing (**combination of groups of four "blocks" *versus* sampling of digital signals under control of a channel selecting signal** to generate a multi-channel sampled signal), and

c. a completely different output (a **frequency modulated signal** consisting of time divisionally multiplexed blocks of PCM signals ***versus*** the claimed **analog voice signal**).

In other words, **none** of the elements of the claimed invention corresponds to any elements of the system and method of Kobayashi, no matter how the claim language is "interpreted." For example, it is respectfully submitted that it is not reasonable to equate, as the Examiner has, the **frequency modulation** of Kobayashi with the **digital-to-analog conversion** of the claimed invention). The claimed invention and the system and method of Kobayashi both use "modulation" and "time division" multiplexing or combination of signals, but otherwise the claimed invention had nothing in common with the system and method of Kobayashi. The time division processing of Kobayashi does not involve the same type of signals and does not achieve the same result as that of the claimed invention, and the modulation is not even remotely the same.

Finally, the Applicant wishes to point out that the reason that the Applicant did not previously present any arguments concerning the Kobayashi patent, as pointed out in item 7 of the Official Action, is that the subject matter of the currently pending claims was indicated as allowable over the Kobayashi patent, and not rejected. The reasons for allowance set forth in the previous Official Action are still believed to be accurate. Accordingly, withdrawal of the rejections of claims 28-30, 33-36, and 41-43 under 35 USC §§102(b) and 103(a) is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, withdrawal of the rejections and expedited passage of the application to issue is requested.

Respectfully submitted,

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